

**Clinical and immunological characteristics of lupus nephritis
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Introduction: Systemic lupus erythematosus (SLE) is a chronic, relapsing, polysystemic autoimmune disease with various clinical signs. Lupus nephritis (LN) is one of the most serious complications of the disease. Classical parameters as proteinuria, antibodies (aDNA, antinucleosome) are not sensitive and specific in predicting renal flares and do not distinguish between activity and chronicity. Over the last few years there has been a growing interest in searching novel biomarkers, which could predict future renal flares.

Objective: My goal was to find out the renal involvement of a large cohort of SLE patients treated by the 3rd Department of Internal Medicine, to find out the correlation between the activity of LN and classical laboratory parameters (serum complement levels, anti-double deoxyribonucleic acid /DNA/ level), to compare serum and urinary cytokine levels of patients with and without renal involvement, to find out the difference between interleukin 1-receptor antagonist (IL-1Ra) level, as a new biomarker in patients with and without LN.

Patients and methods: Records of 551 patients treated with SLE were analyzed, complement levels were determined by nephelometry, antibody and cytokine levels were measured by ELISA, IL-1Ra levels by Fluorokine MAP cytokine multiplex kits designed for Luminex 100TM analyzer using analyte-specific antibodies. All statistical analyses were carried out using SPSS program, Version 13.0.

Results: Lupus nephritis was developed in 144 (26.1 %) of 551 SLE patients followed between 1974 and 2004. 81.2% of LN patients had kidney biopsy. 90% of patients were women, the mean age at the time of renal biopsy was 31.9 years. Occurrence of LN was 3-4 years after the onset of SLE. 38.8% of patients had diffuse proliferative LN. Serum IL-1, IL-2 (both $p < 0.05$), IL-6, IL-13 and IFN- γ ($p < 0.001$) levels were significantly higher in lupus nephritis patients, as compared to patients with SLE without renal involvement and healthy controls. Patients with active SLE had the highest IL-1Ra level and the difference was significant as compared to all other groups and controls ($p < 0.001$).

Conclusions: Serum IL-6 concentration of patients with lupus nephritis was significantly higher, which could confirm the role of IL-6 as a biomarker in lupus nephritis. Lower level of serum IL-1Ra could predict renal involvement in SLE patients.

Key words: Systemic lupus erythematosus, lupus nephritis, IL-6, IL-1-receptor antagonist
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